What is claimed is:

1. A dedicated apparatus for detecting changes in molecular structure of human body surface tissue and diagnosing the properties and the degree of pathologic change of a gland tumor in a corresponding region. This apparatus is comprised of:

(1) a Fourier Transform mid-infrared spectrometer, used in conjunction with a mid-infrared fiber optics sampling attachment to conveniently acquire infrared spectral data of human body surface tissue. This data is processed by a data processor of its own and compared with a tumor database to diagnose the properties and the degree of pathologic change of the tested gland tumor;

(2) a fiber sampling attachment, connected to a fiber coupling part, wherein an ATR probe is able to acquire an subcutaneous infrared spectrum of the tumor at the body surface when placed on the body surface and in tight contact with it;

(3) a fiber coupling part, placed between the Fourier Transform infrared spectrometer and an infrared detector part. The fiber sampling attachment is fixed onto the fiber coupling part, and the fiber coupling part is comprised of two pieces of abaxial parabolic mirrors and a precise fine-tuning mechanism. This device makes the parallel light from an interferometer converge into a point with 1-3 mm, allowing it to effectively be coupled into an incident fiber of the fiber sampling attachment and for the light from an exiting fiber to effectively be coupled into the light path system. The precise fine-tuning mechanism is used for adjusting the position of the parabolic mirrors to precisely focus the infrared light;

(4) an infrared detector part, comprising an abaxial parabolic mirror, a detector and a 3-dimensional tuning holder for maximizing the collection of information acquired by the ATR probe.

2. The dedicated apparatus as described in claim 1, wherein the Fourier

Transform mid-infrared spectrometer uses ZnSe as the infrared window material.

3. The dedicated apparatus as described in claim 1, wherein a tumor database stores spectral data criterion for diagnosing whether a gland tissue has pathologic changes or not. This database is established based on statistical analysis on infrared spectrum data of the tissue of a certain number of healthy persons and patients.

4. The dedicated apparatus as described in claim 1, wherein the fiber sampling attachment is comprised of a mid-infrared incident fiber, a mid-infrared exiting fiber, and a ZnSe or Ge ATR probe. The incident fiber and the exiting fiber are hollow fibers with a metal coating on the inside walls, and the ATR probe is of a tapered shape or cylindered shape with an inclined section.

5. The dedicated apparatus as described in claim 1, wherein the fibers used in the fiber sampling attachment have a diameter of 1-3 mm, and a transmitting range of 700-4000 cm^{-1}.

6. The dedicated apparatus as described in claim 1, wherein for diagnosis of pathologic changes in the mammary glands, the band widths, peak positions, peak intensities/peak areas, and relative intensity variations of the peaks in the region of 1000 cm^{-1} -1800 cm^{-1} and 2800 cm^{-1}-3000 cm^{-1} are detected.

7. The dedicated apparatus as described in claim 6, wherein for diagnosis of pathologic changes in the mammary glands, the band widths, peak positions, peak intensities/peak areas, and relative intensity variations of the peaks in the region of 1400 cm^{-1} -1490 cm^{-1} are detected.

8. The dedicated apparatus as described in claim 7, wherein for diagnosis of pathologic changes in the mammary glands, variations in band widths, peak positions, and peak intensities/peak areas of 1460 cm^{-1} and 1400 cm^{-1} are detected.

9. The dedicated apparatus as described in claim 1, wherein for diagnosis of pathologic changes in the thyroid glands, the band widths, peak positions, peak intensities/peak areas, and relative intensity variations of the peaks in the region of 2800 cm^{-1}-3000 cm^{-1} and 1000 cm^{-1} -1800 cm^{-1} are detected.

10. The dedicated apparatus as described in claim 9, wherein for diagnosis of pathologic changes in the thyroid glands, the band widths, peak positions, peak intensities/peak areas, and relative intensity variations of the peaks in the region of 2800 cm^{-1}-3000 cm^{-1} and 1400 cm^{-1} -1500 cm^{-1} are detected.

11. The dedicated apparatus as described in claim 9, wherein for diagnosis of pathologic changes in the thyroid glands, the band widths, peak positions, peak intensities/peak areas, and relative intensity variations of the peaks in the region of 1200 cm^{-1}-1580 cm^{-1} are detected.

12. The dedicated apparatus as described in claim 1, wherein for diagnosis of pathologic changes in the parotid and submaxillary glands, the band widths, peak positions, peak intensities/peak areas, and relative intensity variations of the peaks in the region of 1000 cm^{-1}-1800 cm^{-1} are detected.

13. The dedicated apparatus as described in claim 12, wherein for diagnosis of pathologic changes in the parotid and submaxillary glands, the

band widths, peak positions, peak intensities/peak areas, and relative intensity variations of the peaks in the region of 1200 cm^{-1}-1580 cm^{-1} are detected.

14. A method for diagnosing the properties and the degree of pathologic change of a gland tumor in a corresponding region by detecting changes of molecular structure of human body surface tissue comprising of the following steps:

(1) using the apparatus as described in claim 1, and selecting operation parameters of the apparatus for detecting the related glands;

(2) cleaning and sterilizing the ATR probe and the skin of a human body surface to be tested;

(3) switching on the apparatus, then scanning and recording a spectrum of air acquired by the ATR probe for use as a background spectrum;

(4) placing the ATR probe on the skin surface of the region to be tested, the probe being in tight contact with the skin, then using the apparatus to scan and record a spectrum of the cleaned human body surface;

(5) comparing the recorded spectrum with tumor data in a spectrum database to diagnose the properties and the degree of pathologic change of the gland tumor.

15. The method as described in claim 14, wherein for diagnosis of pathologic changes in the mammary glands, the band widths, peak positions, peak intensities/peak areas, and relative intensity variations of the peaks in the region of 1000 cm^{-1} -1800 cm^{-1} and 2800 cm^{-1}-3000 cm^{-1} are detected.

16. The method as described in claim 15, wherein for diagnosis of pathologic changes in the mammary glands, the band widths, peak positions, peak intensities/peak areas, and relative intensity variations of the peaks in the region of 1400 cm^{-1} -1490 cm^{-1} are detected.

17. The method as described in claim 16, wherein for diagnosis of pathologic changes in the mammary glands, variations in band widths, peak positions, peak intensities/peak areas of 1460 cm^{-1} and 1400 cm^{-1} are detected.

18. The method as described in claim 14, wherein for diagnosis of pathologic changes in the thyroid glands, the band widths, peak positions, peak intensities/peak areas, and relative intensity variations of the peaks in the region of 2800 cm^{-1}-3000 cm^{-1} and 1000 cm^{-1} -1800 cm^{-1} are detected.

19. The method as described in claim 18, wherein for diagnosis of pathologic changes in the thyroid glands, the band widths, peak positions, peak intensities/peak areas, and relative intensity variations of the peaks in the region of 2800 cm^{-1}-3000 cm^{-1} and 1400 cm^{-1} -1500 cm^{-1} are detected.

20. The method as described in claim 19, wherein for diagnosis of pathologic changes in the thyroid glands, the band widths, peak positions, peak intensities/peak areas, and relative intensity variations of the peaks in the region of 1200 cm^{-1}-1580 cm^{-1} are detected.

21. The method as described in claim 14, wherein for diagnosis of pathologic changes in the parotid and submaxillary glands, the band widths, peak positions, peak intensities/peak areas, and relative intensity variations of the peaks in the region of 1000 cm^{-1}-1800 cm^{-1} are detected.

22. The method as described in claim 21, wherein for diagnosis of pathologic changes in the parotid and submaxillary glands, the band widths, peak positions, peak intensities/peak areas, and relative intensity variations of the peaks in the region of 1200 cm^{-1}-1580 cm^{-1} are detected.